

Introduction

Eating healthy foods is as vital for a child's optimal growth and development as it is for promoting a child's ability and readiness to learn. Children who eat better and are not hungry learn better and are healthier throughout their lives.

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SHAPE California

Shaping Health as Partners in Education (SHAPE) California is a statewide effort of the Nutrition Education and Training (NET) Program of the California Department of Education. SHAPE California is a comprehensive approach to nutrition services that incorporates four components: offering healthy meals in child nutrition programs; promoting comprehensive, sequential nutrition education based on the *Health Framework for California Public Schools*; developing and applying school nutrition policies and practices; and building and maintaining partnerships that promote health and nutrition in schools and communities. There are currently 93 SHAPE California school districts in 30 counties that are committed to making a difference for students by implementing this comprehensive approach.

In March 1997, the NET Program was awarded a five-year grant by The California Endowment to provide leadership and build capacity at the regional level and in schools for an effective, sequential nutrition education program using the SHAPE California approach. The grant includes an evaluation component to determine the effectiveness of the approach.

Health & Education Communication Consultants (HECC), Berkeley, was awarded a contract to conduct the evaluation. The first component of this evaluation was a needs assessment of SHAPE California districts. Two subcontractors participated in the needs assessment. Juarez and Associates, Los Angeles, conducted the focus groups, and Samuels and Associates, Oakland, consulted on the needs assessment findings and recommendations.

Purpose of the Needs Assessment

The needs assessment was conducted in the spring of 1998 to identify what schools need in order to provide effective, sequential, culturally relevant nutrition education as part of a comprehensive nutrition approach¹. The assessment's three-pronged data collection design included:

¹ Comprehensive nutrition approach refers to the full range of activities within a district and school that promote healthful eating practices, including offering healthy foods, promoting nutrition education in the classroom and cafeteria, and implementing nutrition policies.

- A review of the nutrition education literature
- Focus groups with school administrators, teachers, cafeteria staff, and parents
- A mail survey of the child nutrition and classroom partners in the 93 SHAPE school districts

The needs assessment investigated aspects of SHAPE California that are also being explored in other components of the three-year evaluation. These aspects are:

- Recognition of the link between nutrition and academic success
- The value placed on nutrition education
- Nutrition education in the classroom
- Nutrition education in the cafeteria
- The partnership between child nutrition and classroom
- Nutrition-related policies
- Staff development

This report gives a summary of findings across all components of the needs assessment; describes the methods and findings of each component in detail; and makes recommendations for nutrition education.

Summary of Key Findings

The key findings outlined in this section are a synthesis of findings from the three needs assessment components: the literature review; the survey of Child Nutrition and Classroom Partners; and the focus groups. Detailed reports on the methodology and findings from each component follow this section.

The Link Between Nutrition and Learning

The focus groups and survey indicate that most educators know that nutrition impacts learning but that little attention is paid to this relationship. The three needs assessment data sources indicate that the school community generally knows that good nutrition is important. Students know that there is a connection between their food choices and their health, but this knowledge does not influence their eating habits.

- Educators are aware of the link between nutrition and learning, but this knowledge does not translate into action. (Focus Groups and Survey)
- Nutrition intervention does impact student achievement: feeding children prior to testing has resulted in higher test scores at Hawthorne School in Los Angeles. (Focus Groups)
- Children and adolescents are cognizant of the link between nutrition and health, but this knowledge does not translate into healthy food choices. (Literature Review)
- The eating patterns of adolescents do not meet the *Dietary Guidelines for Americans*, and children tend to have diets high in fat, saturated fat, and sodium and low in calcium. Intake of fruits and vegetables is low, resulting in inadequate intakes of fiber and many vitamins and minerals. (Literature Review)
- Teachers feel powerless when kids show up hungry at school; they would like to remedy this situation but are not aware of strategies to resolve this problem. (Focus Groups)

The Value Placed on Nutrition Education

Administrators perceive a lack of emphasis on nutrition from the parents, the community, and the state, and teachers perceive academics as the main priority for both parents and educators. Focus group and survey responses indicate that highlighting the relationship between nutrition and behavior—particularly academic success—to educational decision-makers (including the Legislature), parents, and the community would be the most important way to make nutrition education a higher priority.

- Nutrition education is consistently regarded as low priority because of a perceived lack of public demand (i.e., parental interest) and institutional support (i.e., Department of Education). (Focus Groups)

- Insufficient time and money for core academics leave little resources for extras such as nutrition education. (Focus Groups)
- SHAPE classroom partners (the classroom partner is the school district representative, usually a teacher or district administrator, responsible for coordination of SHAPE in the classroom) identified the two most important factors for making nutrition education a higher priority in schools: (1) increased knowledge about the relationship between nutrition and learning; and (2) the addition of nutrition to student assessments. (Survey)
- Seven survey respondents and focus groups that included parents said that the home was also an appropriate location for nutrition education. (Focus Groups and Survey)
- Teachers and administrators perceived nutrition education as important, but they consistently viewed nutrition education as more appropriate for grade levels other than those with which they worked. (Focus Groups)

Nutrition Education in the Classroom and Cafeteria

The literature review indicates that effective nutrition education should target specific behavioral changes and utilize developmentally appropriate strategies. Nutrition education needs to incorporate social support—parental involvement for elementary children and peer involvement for middle and high school students. Children of all ages will benefit from a community environment that reinforces the nutrition messages taught at school. Survey respondents and focus group participants felt that nutrition education may be successfully implemented as a distinct unit within another subject or via integration into the core curriculum. Both the classroom and the cafeteria are regarded as appropriate locations for nutrition education.

- Nutrition education research has shown that nutrition education is effective in improving dietary practices when behavioral change is the goal and appropriate strategies are employed. (Literature Review)
- Nutrition education programs tend to follow one of two models. One approach bases program design on the knowledge, attitudes, and behavior model. These programs aim to enhance the knowledge and attitudes necessary for understanding food and nutrition issues and for selecting a diet that promotes health. The second approach focuses on the acquisition of skills to reduce specific disease risks and enhance health. (Literature Review)
- Nutrition education programs that target specific behaviors, include self-assessment, and teach decision-making skills are more successful in achieving behavioral change than programs that focus on increasing nutrition knowledge. (Literature Review)
- Nutrition education interventions that are accorded adequate time and intensity have the greatest impact. Curricula that target a limited number of specific foods and behaviors may make the greatest contribution within a limited amount of instructional time. (Literature Review)

- A number of elements are key to successful nutrition education: sufficient exposure to nutrition; a behavioral, skill-building focus; attention to scope and sequence of nutrition education; and adequate preparation of teachers. Integration of nutrition into the core curriculum should not sacrifice these elements. (Literature Review)
- In general, educators were advocates for integration of nutrition into the core curriculum at the elementary level; they preferred teaching nutrition as a distinct unit within a related subject for middle and high school students. (Focus Groups and Survey)
- Social support is crucial to obtaining and sustaining improved food choices. For elementary children, social support means parental involvement. For middle and high school youth, social support means peer support and involvement. (Literature Review)
- Children's eating habits are influenced by the environment in which they live; thus, community involvement in nutrition education effectively reinforces the nutrition messages promoted at school. (Literature Review)
- There was no general agreement as to where nutrition education should take place. The SHAPE partners who were surveyed felt that nutrition education should take place in the classroom and the cafeteria but not as an after-school activity. Focus group respondents were more likely to see nutrition education taking place either in the classroom or the cafeteria but not both. A minority of SHAPE partners and focus group respondents felt nutrition education should take place at home. (Focus Groups and Survey)
- In order to provide culturally appropriate nutrition education, classroom partners want culturally appropriate foods/recipes and lessons. They were not likely to cite a need for bilingual instructors. (Survey)
- Child nutrition partners need increased financial resources to provide culturally appropriate nutrition education. They were least likely to cite a need for staff of the students' cultural background. (Survey)

Partnership Between Classroom and Child Nutrition

Among survey respondents and focus group participants, universal support exists for a strong relationship between the classroom and child nutrition staff, but there are many barriers. The greatest barriers include time to meet and work together and a lack of understanding of each other's job responsibilities, skills, and expertise.

- Strong support exists for a linkage between food service and the classroom, but this link may be difficult to achieve. Barriers to this linkage include: lack of time; food service infrastructure that does not support nutrition education; and a knowledge deficit among teachers and child nutrition workers regarding each other's knowledge, skills, and abilities. (Focus Groups and Survey)
- SHAPE partners picture an ideal classroom-cafeteria partnership as a collaborative relationship with time for regular meetings and opportunities for information exchange. This

partnership would allow the child nutrition staff to understand the needs of the curriculum and would allow the classroom staff to appreciate the work and expertise of the child nutrition staff. (Survey)

- The partners reported working together frequently to plan and implement classroom, cafeteria, and schoolwide activities. Interestingly, the classroom partners perceived more joint planning and implementation than did the child nutrition partners. (Survey)
- The partners differed on their number-one need for supporting a strong partnership. Child nutrition partners needed teacher support, while classroom partners cited regular meetings. (Survey)

Nutrition-Related Policy

The literature indicates that school nutrition policy is an important element of comprehensive nutrition education. School policies should be designed to reinforce nutrition messages taught in the classroom and cafeteria. However, to date, SHAPE partners have not joined forces to address the policy element of nutrition education.

- The school environment needs to reflect the nutrition education objectives. Cafeteria and food-related policy should provide students with access to healthful food choices and allow them to see healthful food practices modeled. (Literature Review)
- The SHAPE partners were not likely to have provided joint input on school nutrition policy. It is not clear from the survey data if neither partner is doing work on school nutrition policy or if the partners are working separately on policy issues. (Survey)

Staff Development and Support Needs

Educators agree that teachers need training to become competent nutrition educators and to feel comfortable in that role. Teachers would be more likely to teach nutrition if they had access to appropriate and easy-to-use materials and additional financial resources.

- Teachers need the following to implement nutrition education: money (i.e., grants to fund nutrition education, a financial incentive from CDE); curriculum and materials; information and training on how to teach nutrition; and a nutrition specialist or other “outsider” to assist with nutrition education. (Focus Groups and Survey)
- Classroom partners most frequently cited cooking supplies and lessons that integrate nutrition into the core curriculum as materials needed for nutrition education. (Survey)
- Classroom partners reported general nutrition and integration of nutrition into the core curriculum as their top choices for training topics. (Survey)
- Classroom partners thought nutrition education training was most appropriately conducted during staff development days and preferred a hands-on format during a short (two hours or less) workshop. (Survey)

- Grants, training, and products and materials were cited by classroom and child nutrition partners as ways NET can improve and increase nutrition education. (Survey)

Review of Nutrition Education Literature

As one part of a three-pronged needs assessment effort, the NET Program commissioned a review of the nutrition education literature. Three major reviews of the research literature undertaken in the mid-1990s constituted the principal sources for this summary of current research:

- The first publication is *Nutrition Education for School-Aged Children: A Review of Research* (September 1994) by Leslie A. Lytle, Ph.D., R.D., of the University of Minnesota, prepared for the U.S. Department of Agriculture. This paper reviewed 17 articles from peer-reviewed journals that met the following criteria: a nutrition education program was delivered to children in K-12 settings within or outside a school setting; a control group was included in the research design; an outcome evaluation was reported; and the nutrition education program had a prevention focus.
- The second, by Lytle and Cheryl Achterberg, Ph.D., Pennsylvania State University, is a monograph entitled *Changing the Diet of America's Children: What Works and Why?* (March 1995). It was prepared for the National Action Conference on Healthy Eating for Children sponsored by the National Partnership to Improve the American Diet. To develop the paper, Lytle and Achterberg reviewed nutrition intervention programs that included an outcome evaluation published in the peer-review literature. Criteria for inclusion were that programs (1) were published since 1980; (2) were conducted in the United States; (3) included a control group; (4) focused on primary prevention; and (5) included some behavioral change goal as an outcome.
- The third major literature review consulted was a special issue of the *Journal of Nutrition Education* (December 1995) entitled "The Effectiveness of Nutrition Education and Implications for Nutrition Education Policy, Programs and Research: A Review of Research" by Isobel Contento, Ph.D., Teachers College, Columbia University. Particular emphasis was placed on the chapter devoted to "Nutrition Education for School-Aged Children." For this summary, Contento and her colleagues reviewed results from 217 nutrition education intervention studies beginning in 1980, including 43 studies addressing school-aged children.

Guidelines for School Health Programs to Promote Lifelong Healthy Eating from the Centers for Disease Control and Prevention (CDC) (June 14, 1996) provided additional perspective to the literature review.

The Status of Nutrition Education

Many children and adolescents do not follow the recommendations of the *Dietary Guidelines for Americans* and the Food Guide Pyramid. On the average, American youngsters consume too much fat, saturated fat, and sodium; too little calcium; and too few fruits and vegetables. One-third (33-34 percent) of their calories are derived from fat and 12-13 percent from saturated fat, above the recommended levels of 30 and 10 percent, respectively. Almost one-half of middle and high school students eat three or more snacks a day, with most being high in fat, sugar, or salt (CDC).

School-aged students appear to be familiar with the general relationship between nutrition and health but less aware of the relationship between specific foods and health; e.g., many do not know which foods are high in fat, cholesterol, sodium, or fiber. Further, adolescents who are well informed about good nutrition and health still fail to make healthy food choices (CDC).

Research has demonstrated that nutrition education is a significant factor in improving dietary practices when behavioral change is set as the goal and the educational strategies employed are designed with that as a purpose. In reviews of the research literature, six elements emerged as part of successful eating behavior change programs for children; most successful programs incorporated most of the elements:

1. Programs are behaviorally based and theory-driven.

According to Contento, nutrition programs developed over the past two decades have been based on one of two different approaches to goals for nutrition education, in terms of both nutrition content and educational outcome. In one approach the goal has been to enhance the knowledge, skills, and attitudes needed by children to understand broad, contemporary food and nutrition issues and to select a diet that is good for their health using a food group approach. Nutrition education is seen as part of general education and is designed to produce nutritionally literate consumers. The educational outcomes of these programs or curricula could be changes in knowledge, attitudes, and/or dietary intake. Many of these programs were funded by the NET Program of the U.S. Department of Agriculture (USDA), and they often rely on the premise that increasing knowledge leads to more favorable attitudes and changed behaviors (referred to as the KAB model).

The second approach began in the 1980s with the increasing evidence linking diet to chronic disease and the availability of funding for reducing risk factors in children through school-based health promotion programs. The goal of nutrition education here is to reduce disease risk as well as to enhance health. The educational outcomes are changes in specific behaviors, such as eating patterns that are lower in fat or sodium and higher in fiber, or acquisition of specific behavioral capacities or cognitive and behavioral skills needed to enact targeted behaviors. These behaviorally oriented interventions grew out of the fields of health education and social psychology or the behavioral sciences and involve the application of strategies found to be useful in other health domains to the domain of dietary intakes. These behaviorally oriented programs are often incorporated into comprehensive health education, and they include comprehensive approaches such as Know Your Body, the Minnesota Heart Health Program, and the Children and Adolescent Trial for Cardiovascular Health (CATCH). Most often, these programs rely on social learning theory for program development and evaluation.

Those who favor the first approach argue that youngsters should be given the analytical and evaluative skills to choose their own diet wisely. They raise the specter of Big Brother in questioning who should decide which behaviors should be emphasized and point out that new scientific knowledge may produce new dietary recommendations in the future, rendering current behavioral recommendations obsolete. Those arguing in favor of behavioral approaches emphasize that behaviors are important to ensure adequate nutrition today and to reduce the risk

factors for the development of chronic diseases tomorrow. Further, they argue that knowledge and behavior are not necessarily positively linked. In addition, behaviorally focused nutrition education will help achieve the Healthy People 2000 goals.

About half of the nutrition education studies conducted since 1980, including those reported after 1990, did not provide a clear description of the theoretical framework used in developing the intervention (Contento). Nutrition education interventions for youth based on social learning theory (SLT) and social cognitive theory (SCT) were designed specifically to address personal factors, such as knowledge about health, value placed on health, self-efficacy, and other beliefs; behavioral factors, such as skills, intentions to act, existing behavioral repertoire, and incentives and reinforcements; and environmental factors, such as parental influence and support, cultural norms and expectations, opportunities and barriers, and peer and adult role models.

The expectancy-value models commonly used with adults, such as the health belief model, the theory of reasoned action model, and the theory of planned behavior model, may not be as useful in understanding preventive health behavior in younger children. This may be because of the remoteness of negative consequences of actions on health and the tenuous relationships between cause and effect. Further, intent to behave does not always translate into behavior because it can be so easily altered.

Of the 43 studies addressing school children since 1980 reviewed by Contento, 17 relied on the KAB model, including several evaluations of NET Programs. In general, these programs almost universally resulted in knowledge gains. Attitude change was inconsistent but generally positive. There were changes in some behaviors in some grades in the four NET evaluations. Where behavioral change occurred, the program tended to be of longer duration.

Twenty-three studies looked at behaviorally focused nutrition education interventions in school settings. A behaviorally based curriculum uses all three domains of learning (cognitive, affective, and behavioral) but focuses them specifically to address predisposition to act, behavioral intentions, and behavioral change. Cognitive understanding is provided to facilitate changes in eating behavior, but the emphasis is on how to choose a healthier diet or how to make decisions. The affective component encompasses not only beliefs, attitudes, and values but also emotional states in relation to food behavior. The behavioral component focuses on building skills (e.g., how to identify low-fat foods). Most of the programs used SLT and planned activities to address personal factors, environmental factors, and the behavioral change process.

In summary, it appears that behaviorally based programs targeting specific behaviors and involving self-assessment, decision-making, and/or behavioral change strategies are more likely to result in behavioral changes. While most studies had mixed behavioral outcomes, some success was seen in 18 of the 23 studies, compared to only 8 of 17 general nutrition education programs.

Over time, the two approaches have grown closer together. CDC's guidelines for school-based nutrition education reflect the current perspective:

Curriculum: Implement nutrition education from preschool through secondary school as part of a sequential, comprehensive school health education curriculum designed to help students adopt healthy eating behaviors.

Instruction: Provide nutrition education through developmentally appropriate, culturally relevant, fun, participatory activities that involve social learning strategies.

Finally, Contento points out that research reveals that effective programs employ developmentally appropriate education strategies. The behavioral component is most important in the early years. The cognitive component becomes increasingly important as children get older. The research on children's health beliefs and understandings about food and nutrition indicates that children in elementary school tend to deal in concrete experiences, rather than in abstract associations. Food classifications and understandings of the link between food and health and food and the environment are concrete. Self-assessments using a food group approach, modeling by adults, basic discussion about media and social influences, and practice of simple cognitive and behavioral skills should be stressed.

As the child approaches middle school, cognitive-motivational processes become important influences on food intake. Children become more able to make food choices in light of their perceptions of anticipated consequences from eating foods. The educational strategies should target making food choices within a broader social and environmental context. At the middle and high school levels, more abstract concepts and causal relationships can be understood.

2. Family involvement is incorporated for elementary children.

Social support, such as family and peer involvement, should be encouraged; it is an important reflection of a developmentally appropriate strategy. For preschoolers and early-grade students, family involvement should be stressed. For example, a feasibility study of a family component in the CATCH program was conducted with multiethnic populations in four states. Children consumed significantly more fresh fruit; fewer sugary desserts, snacks, and fried foods; and less whole milk after the family intervention. Hearty Heart is a 15-session school-based program within the Minnesota Heart Health Program. Based on social cognitive theory, it has the goal of positively affecting students' eating patterns in terms of fat and sodium and their physical activity patterns. Accompanying the school-based program is the Home Team, a five-week activity packet for students and their families that reinforces activities in the classroom. Students involved in the Home Team portion of the program reported more behavioral change as well as reduced total fat, saturated fat, and monounsaturated fat in their diets. At one-year follow-up, the results were still positive.

For older students, peer support is recommended.

CDC Guidelines recommend:

Family and Community Involvement: Involve family members and the community in supporting and reinforcing nutrition education.

3. Programs for middle to senior high students include self-assessment of eating patterns.

Because middle and high school students are cognitively able to understand more abstract concepts related to nutrition and understand cause and effect, programs which include self-assessment of eating behaviors have demonstrated success. One example is the Secrets of Success (SOS) program developed for fifth graders by the Dairy Council of California. Students in this program analyze their own diets based on three-day food records and develop their own plans to improve food selection. An evaluation of over 900 students in California, Oregon, and British Columbia revealed that students in all sites increased their consumption in each of the four food groups targeted. At six to eight weeks after the intervention, the mean intake for the group remained at or above the recommended daily minimum number of servings.

4. Behavioral change programs include intervening on the school environment.

Schools should be healthful environments where the cafeteria and food-related policy provide students with access to healthful food choices and allow them to see healthful food practices modeled. Intervening in the food environments in schools is important for the maintenance of long-term change. Studies have shown that school meals can be modified to make them more healthful, and interventions targeting both the classroom and the school lunch program had positive effects on some behaviors. Changes have also been made in the quality of foods available for selection at the workplace cafeteria or in vending machines (Contento).

Many of the comprehensive, behaviorally oriented nutrition education programs such as Know Your Body and Go for Health have demonstrated success by linking classroom instruction to changes in the school cafeteria. Go for Health, for example, is a school health promotion program designed to reduce cardiovascular risk factors in third and fourth graders. The program included changes in school lunch to reduce fat and sodium; physical education class and classroom instruction integrated to give students consistent messages, opportunities, and reinforcement for eating heart-healthy foods; and increasing levels of physical activity. Results indicated that students in the intervention schools reported consuming less fat, saturated fat, and sodium from lunch (both bag lunches and school meals) (Lytle and Achterberg).

CDC Guidelines recommend:

Integration of school food service and nutrition education: Coordinate school food service with nutrition education and with other components of the comprehensive school health program to reinforce messages on healthy eating.

CDC also recommends that every school create a school food policy that addresses the school environment:

Policy: Adopt a coordinated school nutrition policy that promotes healthy eating through classroom lessons and a supportive school environment.

A school nutrition policy, according to CDC, should be a brief, written document that is developed with input from all relevant constituents within the school community. It should address curriculum and instruction, availability of healthy and appealing foods, food use guidelines for teachers, support for healthy school meals, and linkages with nutrition service providers. Among the nutrition environment issues that the policy can address are:

- Provision of healthy and appealing foods wherever food is available in the school, including meals, snack bars, vending machines, classroom snacks, special events, and staff and parent meetings.
- Discouragement of the sale of foods high in fat, sodium, and added sugars on school grounds and as part of fund-raising events.
- Schoolwide guidelines discouraging teachers from using food for disciplining and rewarding students.

5. Behavioral change programs include intervening in the large community.

Community involvement in nutrition education should be encouraged, according to research, because the environment in which children live influences their eating patterns and behaviors. Among the programs using a community component are the Stanford Five City study and the Minnesota Heart Health Project. In the Minnesota study, youth-specific interventions were school-based, but young people were also exposed to messages regarding cholesterol screening and heart-healthy behaviors in their communities. A five-year evaluation following students from grades six through twelve revealed that students in the intervention group reported healthier food choices compared to a control group in almost every year. Even though students in the intervention condition received some classroom instruction, the programs were of short duration and nutrition was targeted only in the sixth and tenth grades, strongly suggesting the importance of the community intervention.

To increase cost-effectiveness, Contento believes the use of mass communication methods in community nutrition programming is important. For long-term effectiveness, however, local leadership and community involvement are essential. Community programs built around policy initiatives and combined with effective educational strategies may be useful. Such efforts should also aim to improve the availability and accessibility of healthful foods in restaurants and other community settings to support the maintenance of change.

CDC Guidelines recommend:

Family and Community Involvement: Involve family members and the community in supporting and reinforcing nutrition education.

6. More instruction or intervention time results in greater program impact.

Intervention efforts need to devote adequate time and intensity to nutrition education to be effective. Programs of longer duration, more contact hours, and more components result in more

positive results than do shorter programs (Contento). CDC recommends that nutrition education lessons be sequential from preschool through secondary school and should have adequate learning time allocated. Curricula that carefully target a limited number of specific foods or behaviors may make the greatest contribution within a limited amount of instructional time.

The effectiveness of integrating nutrition education into other core subjects has not been evaluated. CDC recommends that integration can reinforce and support nutrition education but should not replace sequentially planned nutrition education. Contento argues strongly against integration. She reports that in one study, where nutrition was integrated into other subject areas, teachers taught only six of the 17 activities in the curriculum. Given that even focused programs do not achieve across-the-board behavioral changes, she believes it is unlikely that integrating nutrition messages into other subject matter could result in behavioral change or even change in some of its antecedents such as values, behavioral skills, or behavioral intent. In particular, the use of an integrated approach would most likely sacrifice the following elements shown to be important: sufficient exposure to nutrition education; a behavioral, skill-building focus; attention to scope and sequence; and adequate teacher preparation. True integration would require teachers from many subject areas to be trained in delivering nutrition education segments that have to add up to a curriculum with a coherent nutrition message. Clearly, that poses a feasibility problem as well as a conceptual one. This does not mean that food- or nutrition-related concepts cannot be reinforced in other subject areas. Indeed, they can, and such reinforcement should be encouraged.

Emerging Trends in Nutrition Education

Among the emerging trends in nutrition education are comprehensive and multidisciplinary programs, the use of mass media, and interactive computer technology.

1. Comprehensive, Multidisciplinary Programs

Among the behavioral change programs, many are multicomponent and pair healthy eating with physical activity; e.g., Go for Health, Know Your Body, Changing the Course, and the Child and Adolescent Trial for Cardiovascular Health (CATCH). In addition to classroom instruction, these programs include changes in the school cafeteria and/or physical education class.

Some nutrition curricula also integrate nutrition into a variety of core subject areas. These include Eat, Think, and Be Healthy, which integrates nutrition pen-and-pencil activities with academic, artistic, and physical subjects. Every Day Lots of Ways is a K-6 interdisciplinary curriculum about 5 A Day and the food guide pyramid that integrates nutrition with health, language arts, science, math, and social studies. Note that few integration programs have been evaluated, so the effectiveness of this approach remains unproved.

2. Mass Media

As noted above, mass media used in a community setting can reinforce concepts taught in the classroom. Some newer nutrition education interventions rely on the media to convey a nutrition message. For example, the Harvard School of Public Health has partnered with the Nickelodeon

cable network to incorporate healthy food and nutrition education messages into preschool programming. Some series on PBS, (e.g., Bill Nye the Science Guy), include nutrition topics in their programming. Few of these efforts have been evaluated, however.

3. Interactive Computer Technology

New multimedia and Internet programs designed to promote healthful eating are increasingly becoming available. An example is The 5 a Day Adventures CD-ROM and website created by the Dole Food Company and the Society for Nutrition Education. Again, few such programs have been adequately evaluated.

Needs in the Nutrition Education Field

A great deal has been learned over the past 20 years about how to design effective nutrition education programs. In particular, substantial achievements have been made in designing effective nutrition education interventions for school-aged children, particularly for elementary children.

Further, the development of comprehensive, integrated programs that combine classroom instruction with the cafeteria, the family, and the community still needs substantial work. Implementation and institutionalization of nutrition education have not been adequately studied, possibly because the field is still trying to determine how to create effective interventions.

There are seven issues in particular that still need further development.

1. Under-served Audiences

More work is needed on developing effective programs for middle school and junior and senior high students, as well as cultural/racial minority populations. Nutrition education works best when messages are tailored to the beliefs and lifestyles of the target audience.

2. Teacher Preparation

If teachers are to teach nutrition, they must receive adequate training and support for delivering curricula as designed. CDC recommends:

Training: Provide all teachers involved in nutrition education with adequate preservice and ongoing in-service training, with a focus on behavioral change teaching strategies.

Health educators or nutrition specialists hired at the school or district level might be good resources but not without substantial cost.

3. Integration of Nutrition Education

This approach has appeal given the already-heavy demands placed on the school day, but design, evaluation, implementation, and institutionalization of such programs are very difficult and evaluation of integrated programs is limited.

CDC and others recommend integrating nutrition education into comprehensive school health education, and, indeed, some of the most effective nutrition education interventions have been designed as one component of comprehensive health education. However, questions related to what years nutrition is taught, how nutrition fits into a scope and sequence chart, and the time devoted to nutrition must still be ironed out.

4. Institutionalization

Little is known about how to maximize and institutionalize programs. Many of the behavioral change programs shown to be effective have been taught by teachers under researcher supervision. However, experience in other subjects suggests that evaluated programs are not always implemented as designed once they are disseminated in nonresearch settings.

5. Community Involvement

Far more needs to be known about how to engage the community in promoting and supporting a healthful eating environment to support and reinforce school-based efforts. Contento points to needs in identifying the exact communication strategies used in successful mass media interventions and their underlying rationale to determine how exposure to and awareness of media campaign elements are related to outcomes. She further points out that work on understanding community organization needs to be extended and shared. Case studies on the identification and effective activation and integration of community resources for nutrition education would be highly useful for people who are designing, implementing, and evaluating programs. Research on the diffusion and institutionalization of practices in a wide variety of communities is urgently needed.

Community-level studies should explore broad-based public policy initiatives as well as studies that test various strategies and target populations that have not been reached successfully.

6. Evaluation

There is an overall need for stronger monitoring and evaluation of nutrition education interventions. Among CDC's guidelines for school-based programs is:

Evaluation: At regular intervals, evaluate the effectiveness of the school health program's efforts to promote healthy eating and institute changes as appropriate to increase effectiveness.

7. Dissemination of Effective Programs

Finally, there is a need for effective programs to be widely disseminated so that the health of all children may be improved.

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Survey of Child Nutrition and Classroom Partners

Introduction

School districts that participate in SHAPE California designate two individuals to provide leadership and coordination of all SHAPE activities. These individuals represent the child nutrition and classroom aspects of SHAPE and are called “Partners.” The child nutrition partner is usually the director of child nutrition or food services, and the classroom partner is usually a teacher, nurse, or administrator.

In May 1998, a survey of the child nutrition and classroom partners at the 93 school districts participating in SHAPE California was undertaken to ascertain their needs. Telephone follow-up calls were made three weeks after the initial mailing to remind partners to return their surveys.

Eighty-two child nutrition partners and 50 classroom partners responded, for respective response rates of 89% and 59.5%.

Copies of the survey instruments may be found in Appendix 1. Some questions were common to both survey instruments, while others were unique to the responsibilities and perspectives of each partner. Although most items were closed, requiring respondents to choose from among several responses, others were open-ended. The verbatim responses of the child nutrition and classroom partners may be found in Appendix 2.

The Sample

Just under two-thirds (62.9%) of the total sample were child nutrition partners, while just over one-third (37.2%) were classroom partners. Most of the classroom partners were teachers (13.6%) or district administrators (9.1%), as seen in Table 1.

Table 1
Respondent Roles

Role	Percentage
Child Nutrition	62.9
Teacher	13.6
District Administrator	9.1
School Administrator	6.1
School Nurse	5.3
Project Director	2.3
Other	.8

Demographic Characteristics of SHAPE Respondents' Districts

Demographically, SHAPE Partners responding to the needs assessment survey represent a wide variety of school districts in California. Districts ranged in size from 67 students to 649,054. Generally, one-third of districts had fewer than 2,000 students and were considered small for the

purpose of this analysis; one-third had 2,001 to 9,999 students and were treated as medium in size; and the remaining one-third had more than 10,000 students.

The ethnic composition of students within districts varied considerably, from districts that were 97.1% white to those in which 90.5% of the students were Hispanic. Across all districts, the average number of white students was 55%; Hispanic, 26.2%; Asian/Pacific Islander, 7.9%; and African-American, 5.9%. For purposes of this analysis, districts were categorized as high, medium, or low in ethnic diversity in equal thirds (e.g., one-third of the districts with the highest number of white students were categorized as low in ethnic diversity).

Similarly, the percentage of students on the free or reduced-price meal program (a proxy indicator of student poverty) ranged from 2% to 93% across districts. For this variable, the one-quarter of districts with the highest percentage of students on free/reduced-price meals were ranked as low income; the middle half were ranked as middle income; and the one-quarter with the lowest percentage were ranked as high-income districts.

The Findings

Where Nutrition Education Currently Occurs

The child nutrition partners were asked to identify the types of nutrition education activities that occur in their districts' cafeterias. Posters and healthy food choices were cited by the vast majority (more than 90%), while three-quarters (75.6%) have student participation in the planning, preparation, or serving of school meals. Six out of ten districts (59.8%) post nutrition-related information in the cafeteria; considerably fewer rely on point-of-service nutrition information (31.7%) or post nutrient analyses of their daily menus (26.8%), as seen in Table 2.

Table 2
Nutrition Education in the Cafeteria

Nutrition Education Activity	Percentage
Posters	92.7
Healthy Food Choices	91.5
Student Participation	75.6
Post Nutrition-Related Information	59.8
Point-of-Service Information	31.7
Post Nutrient Analysis of Menu	26.8

Classroom partners were asked to report on how much nutrition education occurs in the classroom at each of four grade levels: PreK-Kindergarten, Elementary School, Middle School, and High School. As displayed in Table 3, approximately one-half of the students receive one to four class periods per year on nutrition education, while another quarter to one-third receive more than eight class periods per year. High school students are more likely than their younger counterparts to be exposed to eight or more class periods about nutrition.

Table 3
Nutrition Education in the Classroom (Percentage)

No. of Class Periods/Year	Pre K – K	Elementary	Middle	High
None	0.0	0.0	6.3	5.3
1-4	48.0	48.6	56.3	42.1
5-7	28.0	17.1	12.5	10.5
8 or more	24.0	34.3	25.0	42.1

When students receive nutrition education, how likely are they to study nutrition as a separate discipline rather than as a topic integrated into a core curriculum subject? As shown in Table 4, one-fifth to one-quarter of all nutrition education occurs as a separate unit within a health curriculum. Integration of nutrition education is most likely to occur during the elementary grades when the student has a single teacher in an intact classroom who can plan and execute integrated lessons. It is less likely to occur at the middle school and high school levels when opportunities for cross-curricular planning are less likely.

Table 4
How Nutrition Education Is Taught (Percentage)

Approach	PreK – K	Elementary	Middle	High
Health Unit	22	26	26	20
Integration	36	50	18	10

When asked about the best approaches to ensure that nutrition education is taught, Classroom Partners indicated that integration of nutrition into core curriculum subjects (52%) and presentation as a unit within other subjects, such as health (50%), were most likely to succeed. Schoolwide activities, such as health fairs (42%) and through cafeteria displays (36%), are also feasible strategies. As Table 5 suggests, providing nutrition education as its own subject is the approach least likely to succeed.

Table 5
How Best to Ensure Nutrition Education Is Taught

Approach	Percentage
Integrated into Core Curriculum	52
As a Unit within Other Subject, e.g. Health	50
As a Schoolwide Activity, e.g., Health Fair	42
Through Cafeteria Displays	36
As a Separate Subject	8

Table 6 displays the materials currently used for nutrition education at each grade level. Published nutrition curricula are most commonly used at the elementary, PreK-Kindergarten, and middle school levels, as are teacher-developed lessons. At the high school level, teacher-

developed lessons and textbooks were more common. Little nutrition education is provided within district-developed curricula.

Table 6
Nutrition Education Materials in Use (Percentage)

Type of Material	PreK–K	Elementary	Middle	High
Textbook	2.0	4.0	12.0	12.0
Nutrition Curriculum	32.0	52.0	24.0	6.0
Teacher-Developed Lessons	56.0	58.0	40.0	18.0
District Curriculum	2.0	4.0	4.0	8.0

At the PreK-Kindergarten and elementary levels, the most commonly used nutrition curricula are those from the Dairy Council and, secondarily, Team Nutrition (Scholastic). Dairy Council materials were also frequently mentioned for middle school students. Textbooks were more commonly cited at the middle school and high school levels, but no single textbook nor curriculum appears to dominate at these levels.

Desired Nutrition Education Strategies

Both child nutrition and classroom partners were asked where they thought nutrition education should occur in their districts. Although there is general agreement among all respondents that nutrition education should occur both in the classroom and in the cafeteria, considerably fewer believed that nutrition education should be provided during after-school programs (Table 7).

Table 7
Preferred Locations for Nutrition (Percentage)

Location	Classroom	Cafeteria	After-School
Child Nutrition Partner	98.8	89.0	34.1
Classroom Partner	96.0	90.0	44.0

In addition, four child nutrition partners and three classroom partners suggested that the preferred location for nutrition education is in the home.

Needs of Teachers

In order to promote nutrition education in the classroom, classroom partners identified materials (37.9%) and training (27.3%) as the greatest needs of teachers. As shown in Table 8, technical assistance was not considered a high priority for encouraging teachers to provide nutrition education.

Table 8
Teachers' Needs in Nutrition Education

Need	Percentage
Materials	37.9
Training	27.3
Technical Assistance	8.3

In terms of teachers' needs for materials, classroom partners identified cooking supplies (82%), lesson plans for integrating nutrition into core subjects (74%), stand-alone nutrition lessons (66%), multimedia products (60%), and commercially published nutrition education activities (58%) as the greatest needs. Fewer selected a compendium of commercially published activities (38%) or a compendium of on-loan materials (28%) as fulfilling teachers' needs (Table 9).

Table 9
Teachers' Needs for Materials

Material	Percentage
Cooking Supplies	82
Integration Lessons	74
Stand-alone Lessons	66
Multimedia Products	60
Commercial Nutrition Activities	58
Compendium of Commercial Curricula	38
Compendium of On-Loan Materials	28

When asked the best time to provide in-service training, staff development days were the most popular choice (64%), followed by after-school workshops (37.9%). Classroom partners were unanimous in their opinion that weekends were inappropriate times for nutrition education training, and few endorsed preservice training as a priority (Table 10).

Table 10
Best Times for In-service Training

Time	Percentage
Staff Development Days	64.0
After School	37.9
During Preservice	12.0
Weekends	0.0

Nutrition in general and integrating nutrition into the core curriculum were the most commonly requested topics for in-service training nominated by the classroom partners. Other topics receiving two nominations each were cooking in the classroom and nutrition/health and their effect on learning.

The preferred format for in-service training is "hands-on," and the preferred length is two hours or less.

Partnerships

When asked to describe an ideal partnership between child nutrition and the classroom, most respondents described a collaborative relationship with time built in for regular meetings and an exchange of information so that child nutrition partners would understand the needs of the curriculum and teachers would appreciate the work and expertise of child nutrition. There appears to be an undercurrent of frustration in the working relationship that seems to reflect a lack of understanding on each side about the needs of the other. Here are some illustrative comments:

Comments from Child Nutrition Partners

Teachers would value nutrition education. Administrators would actively introduce teachers to the student nutrition specialist and facilitate opportunities to meet with her (him) as well as support the idea of the partnership. Teachers would then call on the nutritionist and plan together, classroom and cafeteria activities. I think, at best, administrators provide lip service to the idea of nutrition education, rather than actively promote or require it.

Child nutrition staff and services are used as resources for the classroom. Trained child nutrition staff can help with classroom activities. Cafeteria can conduct reinforcement activities. Teachers need to work nutrition education into the curriculum.

Child nutrition would know what/when nutrition education is being taught in the classroom, so cafeteria could support meal planning. Information is needed in advance—not the week of the lesson.

Both parties are willing to give time freely. They must set the same goals, develop objectives together and consider themselves as a real “team.” They must really care about good nutrition—some people don’t.

Teachers would ask us how we could support their nutrition lessons. Or, better still, district curriculum specialists would ask us for support and we would see results from that collaboration at the school.

Instructional staff need to be comfortable in using the cafeteria’s resources and assisting cafeteria staff to present nutrition information. Not having the “gap” that exists between food departments and certificated staff. Providing instructional staff with resources that revolve around NSLP menu items and to use district food services as cores to curriculum.

Comments from Classroom Partners

Child nutrition should have a better understanding of the district’s core curriculum and scope and sequence so they can more fully engage in curriculum discussions and integrate nutrition activities (including cafeteria) into regular classroom lessons.

Time to plan together for lessons that integrate into a core curricular area. Child nutrition needs to work with classroom teacher as co-presenter. Lots of materials and displays in both cafeteria and classroom and information and activities involving parents.

Open communication, joint regular meetings.

Time built into job description of food service director and teacher coordinators so that real collaboration could take place.

Most Partners see their partnership as a work in progress. A small minority (2 to 4%) say they have established a close, working partnership. About two-thirds report they are “working on it,” while almost one in five say they are still “far away.” Child nutrition partners were slightly more likely than classroom partners to express dissatisfaction with the partnership, as shown in Table 11.

Table 11
Current Status of Partnership (Percentage)

Respondent	Far Away	Working on It	Very Close	We’re There
Child Nutrition	22.7	65.3	8.0	4.0
Classroom	14.6	66.7	10.4	2.1

Neither district size nor income of the students served showed a statistically significant correlation with strong working relationships between SHAPE partners. However, a comparison of the status of SHAPE partnerships by district size suggests that those from large districts may experience greater challenges in building a working relationship, as shown below:

Table 12
Status of SHAPE Partnership by District Size (Percentage)

District Size	Far Away	Working on It	Very Close	We’re There
Small	16.6	63.9	11.1	8.3
Medium	16.2	65.1	9.3	9.3
Large	23.7	68.4	5.3	2.6

Table 13
Status of SHAPE Partnership by Student Poverty (Percentage)

Income Level	Far Away	Working on It	Very Close	We’re There
Low Income	20.0	66.7	6.7	6.7
Medium Income	23.2	58.9	12.5	7.1
High Income	12.1	78.8	3.0	6.1

Table 14 shows the kinds of activities in which the partnerships are engaged. Partners appear to work together frequently to jointly plan and implement classroom, cafeteria, and schoolwide

activities. Providing joint input on nutrition policy is the activity that is least likely to occur within these partnerships.

An interesting pattern revealed in Table 14 is that the classroom partners are more likely to indicate joint planning and implementation in all domains than are the child nutrition partners. This difference in perception is more pronounced in regard to joint planning and implementation of nutrition education activities in the cafeteria, which the child nutrition partner may regard as her or his exclusive domain. There is also a gap in perception about joint implementation of schoolwide activities.

Table 14
Types of Partnership Activities (Percentage)

Activity	Child Nutrition	Classroom
Jointly Plan Classroom Activities	53.7	56.0
Jointly Implement Classroom Activities	54.9	60.8
Jointly Plan Cafeteria Activities	43.9	60.0
Jointly Implement Cafeteria Activities	40.2	58.9
Jointly Plan Schoolwide Activities	42.7	48.0
Jointly Implement Schoolwide Activities	30.5	46.0
Joint Input on Nutrition Policy	18.3	34.0

When asked to identify the greatest barriers to partnering, respondents replied that time was far and away the greatest barrier, as seen in Table 15. Child nutrition partners also identified their job responsibilities as a major barrier; this response, however, may be a variation on the issue of lack of time.

Table 15
Barriers to Effective Partnering (Percentage)

Barrier	Child Nutrition	Classroom
Time	87.7	88.0
Resources	25.6	30.0
Lack of Administrative Support	30.5	24.0
Job Responsibilities of Child Nutrition	58.5	38.0
Lack of Coordination	24.4	38.0
Insufficient Information on Other's Domain	35.4	8.0

When asked what would have to take place in order to achieve a better partnership, child nutrition partners most often requested stronger teacher support, suggesting some dissatisfaction with the level of support now received from teachers, as seen in Table 16. Regular meetings were suggested by half of both the child nutrition and classroom respondents, as was training. Four out of five respondents also stated that stronger administrative support would be required.

Table 16
Needed Supports for Partnerships (Percentage)

Support	Child Nutrition	Classroom
Change in District Policy	22.0	22.0
Administrative Support	40.2	42.0
Revised Child Nutrition Job Description	23.2	32.0
Training	54.9	48.0
Regular Meetings	50.0	50.0
Teacher Support	64.6	N.A.

Some child nutrition partners report frustration that teachers are not more supportive. For example, some commented:

There's a lack of interest with instructional staff.

Certified staff doesn't think of us as a resource for nutrition education. It just doesn't occur to the majority of them until the opportunity arises.

Teachers are not requesting available resources.

No help from teachers.

When asked what specific incentives might motivate stronger partnerships, child nutrition partners were most likely to name training of school staff and time to plan and work together. Paid time to attend teachers' meetings, for example, was noted, as was financial support to provide more staff. Child nutrition partners also requested more interest from instructional staff in nutrition education.

Some classroom partners, on the other hand, complained that teachers were motivated but food service directors lack the time to participate. Lack of time was noted as a significant barrier for teachers, as well as a lack of financial resources that would support meeting attendance. Training and materials were also noted as incentives for motivating stronger partnerships.

Needs of SHAPE Partners

SHAPE Partners were asked what resources they needed to provide culturally appropriate nutrition education to students. The most frequently requested resources by classroom partners, as seen in Table 17, were culturally appropriate foods/recipes and lessons (48% for each) and for greater financial resources (44%). Increased financial resources (45.1%) topped the list of desired resources for child nutrition partners.

Table 17
Resources Needed by Shape Partners
for Culturally Appropriate Nutrition Education (Percentage)

Resource	Child Nutrition	Classroom
Staff Similar in Cultural Background to Students	2.4	14.0
Culturally Appropriate Foods and Recipes	32.9	48.0
Culturally Specific Lesson Plans	36.6	48.0
Culturally Appropriate Materials	35.4	30.0
Bilingual Materials	23.2	22.0
Bilingual Instructors	4.9	10.0
Links with Food-related Businesses	14.6	26.0
Food Vendor Choices	22.0	16.0
Links with Community Organizations	18.3	18.0
Ability to Conduct Food Demonstrations	30.5	30.0
Financial Resources	45.1	44.0

How the NET Program Can Help Child Nutrition Partners

Grants, training, and products and materials were the most popular suggestions for how the NET Program could improve and increase nutrition education. Grants were proposed to defray the cost of additional staff, training, and materials. The most frequently cited training needs were to learn how to present lessons in a way that teachers would find professional and students interesting and to receive training on how to “sell” nutrition education to instructional staff. New and exciting curricular materials were suggested. Technical assistance in how to develop age-appropriate lesson plans, as well as mentoring, was also requested.

A complete set of suggestions from child nutrition partners may be found in Appendix 2.

How the NET Program Can Help Classroom Partners

Grants, products, and materials, training, and technical assistance were ways that classroom partners suggest the NET Program could improve and increase nutrition education. Grants could support additional staff, reflecting teachers’ perception that there is not enough time in the day for one person to meet all the instructional needs of students. Training in how to integrate nutrition into the core curriculum and work with parents to promote nutrition education at home, along with good materials such as videos, theme kits, and so forth, were suggested.

Appendix 2 contains a complete list of all suggestions made by classroom partners.

Promotion of Nutrition Education

Classroom partners were asked to identify factors that would influence teachers and administrators to make nutrition education a higher priority in their schools. Increased knowledge about the relationship between nutrition and learning topped the list at 60%, while

adding nutrition knowledge to student assessments (56%), increased training (52%), and parent demand (52%) also received high marks (Table 18).

Table 18
Factors Promoting Nutrition Education

Factor	Percentage
Knowledge About Nutrition and Learning	60
Adding Nutrition to Assessments	56
Increased Training	52
Parent Demand	52
Increased Public Awareness of Nutrition	40

Focus Groups with SHAPE California Districts

Introduction

This section presents the findings from thirteen 13 focus groups held with persons associated with or knowledgeable about school nutrition education, including: administrators (principals, superintendents, curriculum developers, and so forth); teachers and other classroom personnel; and a mixed group of parents, child nutrition staff, and school nurses. The purpose of the focus groups was to discuss local definitions of nutrition education, the current status of nutrition education, district nutrition education needs, and approaches to address those needs.

The focus group component of the needs assessment was conducted by Juarez and Associates, Los Angeles (Juarez) under a subcontract agreement with Health & Education Communication Consultants (HECC). HECC conducted two of the 13 groups as pilot tests of the focus group protocol.

The Sample

All focus groups were in SHAPE California districts, and all but one district lay within a region that has a Regional Nutrition Education Specialist (RNES).² Recruitment of focus group participants was done through the district-level SHAPE Partner(s), who identified participants according to criteria described by Juarez.

Although Juarez requested that focus group participants come to a formal focus group facility (with a two-way mirror for observation), in no case was that recommendation followed. District staff felt strongly that unless the groups were held at the district or school site, no participants would come.

Table 19 shows the participating districts by group type and numbers of participants for each focus group. Table 20 gives demographic information for each district.

² The NET Program is using the regions established by the Department of Education for the Statewide System of School Support. The NET Program provides five of these regions with a locally based Regional Nutrition Education Specialist (RNES). RNESs provide technical assistance to the districts within the region.

Table 19
Focus Group Districts by Type of Group

Teachers	Administrators	Mixed
Irvine Unified School District Orange County, Region 9B N = 8	Hawthorne Elementary School District Los Angeles County, Region 11 N = 5	Compton Unified School District Los Angeles County, Region 11 N = 12
Elk Grove Unified School District Sacramento County, Region 3 N = 7	Santa Cruz City Elementary School District Santa Cruz County, Region 5 N = 4	Lagunitas Elementary School District Marin County, Region 4 N = 8
Pixley Union Elementary School District Tulare County, Region 7 N = 9	Center Unified School District Sacramento County, Region 3 N = 9	El Dorado Union High School District El Dorado County, Region 7 N = 6
Vacaville Unified School District (Pilot group) Solano County, Region 4 N = 8	Jefferson Union High School District San Mateo County, Region 4 N = 4	Burton Elementary School District Tulare County, Region 7 N = 8
		New Haven Unified School District (Pilot group) Alameda County, Region 4 N = 7

Table 20
SHAPE Focus Group Demographics

District	Size	Free/ Reduced- Price Meals, %	American Indian/ Alaskan Native, %	Asian, %	Pacific Islander, %	Filipino, %	Hispanic, %	Black (not Hispanic), %	White (not Hispanic) %
Burton Elementary School District	2,070	55.0	0.4	3.3	0.1	5.1	40.3	0.6	50.1
Center Unified School District	5,500	30.0	1.1	8.0	1.5	3.5	10.3	13.9	61.8
Compton Unified School District	26,070	71.0	0.0	0.1	1.0	0.0	62.9	35.7	0.2
El Dorado Union High School District	5,951	9.0	2.4	1.5	0.4	0.5	5.2	0.7	89.4
Elk Grove Unified School District	38,032	35.0	1.3	15.2	1.9	5.0	16.3	19.1	41.2
Hawthorne Elementary School District	8,343	85.0	0.1	4.2	1.6	1.0	50.9	36.5	5.7
Irvine Unified School District	21,868	10.0	0.4	25.2	0.3	1.4	7.4	3.0	62.2
Jefferson Union High School District	8,051	17.0	0.4	11.0	2.4	28.8	25.3	7.4	24.7
Lagunitas Elementary School District	430	17.0	0.0	3.4	0.4	0.0	4.7	3.4	88.1
New Haven Unified School District	13,713	34.0	0.3	17.2	1.2	17.2	28.3	12.5	23.2
Pixley Union Elementary School District	840	90.0	0.5	0.8	0.0	0.1	70.9	7.7	20.0
Santa Cruz City Elem. School District	3,341	21.0	0.4	3.8	0.4	0.9	30.2	2.9	61.3
Vacaville Unified School District	14,000	26.0	1.4	2.8	1.1	1.4	16.7	8.4	68.2

It is important to note that results of focus groups are intended to provide readers with an impression of issues relevant to the target group(s). Due to the small number of participants in the groups and the self-selection process for participation, the sample cannot be considered statistically representative of the target segment. Findings should not be viewed as applicable to the entire segment under study but as providing insights into overall attitudes and trends.

The Findings

The findings for these focus groups are presented in the following order: Administrators, Teachers, and Mixed.

Administrator Groups

Administrators represented four very different districts from both geographic and demographic perspectives. With the exception of one African-American assistant superintendent, all participants in the administrator groups were white. Center Unified School District, located in Antelope, is a suburb of Sacramento. Hawthorne Elementary School District is an urban district

in Los Angeles County. Santa Cruz City Elementary School District is in a small city 100 miles south of San Francisco, and Jefferson Union is a high school district located in Daly City, not far from the San Francisco airport.

When asked to *define nutrition education*, most administrators talked about healthy eating and healthy foods. Many included the food pyramid and good versus bad foods in their definition. Some talked about teaching children, while others specified the actual classes in which nutrition education would be taught, such as health classes or through “the science curriculum.”

All agreed that there was an important *relationship between nutrition and learning*, but some referred to the link between sugar and “hyper” behavior rather than to the link between breakfast and paying attention in math class (for example). Hawthorne had actually increased their test scores by feeding children in the classrooms on the mornings that they were taking their achievement tests. Overall, it was believed that educators were aware of the link between nutrition and learning, but the awareness did not translate into action. It was believed that teachers were powerless to do much beyond alert the school nurse or child nutrition staff when they perceived that children were hungry at school. There was also some concern expressed about the fact that the information that the public received was inconsistent.

When asked if *nutrition education was a priority* in each district, all agreed that it was not. Santa Cruz administrators stated that nutrition education was inconsistently implemented across schools there. Hawthorne administrators agreed that although nutrition education was not a priority, thanks to the efforts of the child nutrition administrator, the foods available to students and teachers through the campus vending machines and cafeterias at the middle schools were much healthier. Interestingly, the administrators from Center Unified (elementary principals) felt that nutrition education was probably more of a priority at the secondary level than it was at the elementary level, while those from Jefferson Union High School District believed that nutrition education was probably more of a priority at the elementary level than it was at the secondary level. In other words, people assumed that nutrition education was more appropriate for grade levels other than those with which they had personal experience.

Participants then were asked to give ideas about *why nutrition education was not a priority for different stakeholders districtwide, and what it would take to make nutrition education a priority* for these folks. Again, there was agreement across all four groups. Stakeholders did not view nutrition education as a priority because there was no emphasis from the community or from the state that it be so. As participants stated:

- It would have to be something drastic; all of a sudden it would have to be something that brings it up in the newspapers; a crisis in the food industry or something, and all of a sudden it sparks people’s interest. (Jefferson Union)
- The Board would have to be accountable to the community for nutrition education. (Center Unified)
- Parents want to know what we are doing about test scores. (Hawthorne)

- Nutrition education has to be seen as part of the big picture. There should be nutrition standards for every grade level. (Hawthorne)
- It's really not mandated by the state to have to teach nutrition so we don't. It is also not tested. Testing is really math and reading. (Santa Cruz)

Other reasons listed for nutrition education not being a priority were that there was not sufficient time and money to teach the basics, much less nutrition education ("How are you going to build in the minutes?"); it's not as important as reading and math ("Forty percent of the children are below grade level"); and "we have limited funds and limited support."

The groups did not agree *where nutrition education should happen*. Administrators from Jefferson Union, Center Unified, and many from Santa Cruz felt that nutrition education should happen at home, while Hawthorne administrators viewed it as most appropriate in the classroom. One older principal from Jefferson said that if nutrition education were going to occur in the classroom, it had to be continuous from kindergarten through twelfth grade. When asked, all participants (with the exception of the child nutrition service staff) stated that they had learned about nutrition at home.

Answers to the question, *What do teachers need to implement nutrition education?* ranged from: curricula and materials to financial support to training to information to availability of a nutrition specialist.

Curricula and materials

- A curriculum appropriate for kindergarten with the materials to support it (Hawthorne)
- Activities programs (Hawthorne)
- Books, materials, scope and sequence, manuals, direction (Jefferson Union)
- I think there are a lot of materials. The key is to determine which materials would be chosen and how you could implement a program. (Jefferson Union)
- There should be some teachers' manuals by grade level (integrated across core subject areas) that schools can purchase. (Jefferson Union)
- Materials and I think opportunities to learn. (Hawthorne)
- Food Charts (Jefferson Union)

Financial Support

- The opportunity to write grants (Hawthorne)
- A financial incentive from the Department of Education (Hawthorne)

Training

- We need somebody that comes from the outside. Has to be interesting . . . you don't have to be an actor . . . but you have to be interesting. (Jefferson Union)
- We need to know how to use the training and incorporate it into the curriculum or integrate it into the curriculum. (Jefferson Union)

Scientific Information

- To learn the information and put it into action (Hawthorne)

- Information about fat content (Jefferson Union)
- Test scores demonstrating the link between nutrition and learning (Jefferson Union)
- The basic knowledge of or science of nutrition . . . like fundamentals of nutrition . . . what is a fatty acid and what is a saturated fat? (Jefferson Union)

Nutrition Specialist

- A nutrition specialist for each school with materials and lesson plans (Center Unified)

While most educators believed that nutrition could and should be integrated across the entire curriculum, the secondary school administrators felt that it was more likely to be taught within subject areas of health, home economics, physical education, and science.

The administrators agreed that there should be (in theory) a strong ***linkage between child nutrition and the classroom***; however, (in practice) the linkage was unlikely to occur. In Hawthorne, a strong child nutrition person had made remarkable changes in the district's approach to the kind of food served in the cafeteria and vending machines, the ambience of the cafeteria, and a new policy of feeding students before administering achievement tests. In Jefferson Union, the linkage was between the students and the child nutrition staff. For example, the High School Leadership Class worked with the director of child nutrition to make changes in cafeteria service. Similarly, in Center Unified, students from one school planned the lunch menu for a week. Barriers to a more solid integration between child nutrition and the classroom included the fact that cafeteria workers had little time and did not perceive nutrition education as their job, the fact that the directors of child nutrition felt forced to compete with fast-food restaurants to get the students' lunch business and show a profit, and school infrastructures that did not lend themselves to having students in the kitchen.

Administrators were asked whether or not ***nutrition education was evaluated*** in each district. Testing approaches were similar across districts (state-sanctioned achievement tests, subject matter-specific or teacher-made tests, basic skills observations, portfolios, and so forth). Administrators agreed that, unless the state and community emphasis on nutrition education changed, nutrition education would not be evaluated.

"I don't think you will ever see an assessment statewide that centers on nutrition. A lot of this is "economics." People ask, "How is this going to help my child get a job?" The community wants to see schools emphasize the reading and math skills. I don't think that they are going to see nutrition education as important. They'll see it as a lighter choice, not an economic choice." (Center Unified)

In summary, from the administrators' point of view, nutrition education was not a priority for them because there was no public demand or institutional (California Department of Education) support. They viewed nutrition education as important, but largely in a theoretical sense. The greatest amount of district support seemed to occur in Hawthorne where concrete changes (thanks to the SHAPE grant) have been implemented and concrete results have been perceived.

The following section addresses the remarks and opinions that teachers gave about nutrition education.

Teacher Groups

Teachers from Elk Grove, Irvine, Pixley and Vacaville (which served as a pilot site) school districts took part in these SHAPE focus groups. Again, these districts represent very different sectors of California. Irvine, a largely white district, is suburban and characterized by freeways, shopping centers, and “newness.” Pixley, in the San Joaquin Valley, is a farming community. The district consists of one school that serves mostly Latinos. Elk Grove, a high school district, is also a rural district located not far from Sacramento. Vacaville is a suburban community located between Oakland and Sacramento, whose residents are multicultural and primarily blue-collar.

With respect to ***nutrition education***, teachers’ definitions included: educating the children about what food is good for us, helping children make the right food choices, teaching children about what it is that they are eating. Not all teachers were convinced that there is a ***relationship between nutrition and learning*** and one specifically stated that “We all still believe that the relationship between sugar and hyperactivity exists. It’s bad, that new study says that it doesn’t affect them when they eat sugar. We say baloney to that” (Irvine). Furthermore, it was the opinion that the teachers who believe the research about the relationship between nutrition and learning do not do anything about that belief. “It’s deep down, it’s not on the surface for them” (Elk Grove). “I think that a lot of it has to do with the resources available and I think as educators we all know that nutrition is valuable . . . and children need to understand this and it gets put under the pile. So if I ever get the resources, then I’ll do nutrition” (Pixley). In Vacaville teachers felt that teachers, administrators, and nurses in their district are clear on the link between nutrition and learning.

Nutrition education was not considered to be a ***priority*** in these districts, at least as far as the teachers were concerned. They felt there was no emphasis on nutrition education because academics is the priority for parents and educators alike. To make nutrition education a higher priority, the importance of nutrition education has to be sold to everybody from the school board on down. Nutrition education has to be made relevant to academic performance, information about the importance of good nutrition has to be made available to all educators and parents, and teachers need materials to present to the students.

“We need continuing education. Although at training seminars, a lot of the things that are promoted are usually things that I know, it needs to be repeated over and over in order to bring it to the forefront. ‘Refreshing’ helps me to take that back to students. Reviewing information in any form (printed information, videos, and so forth) would help.” (Elk Grove)

Teachers named more stakeholders than the administrators had identified:

- Everybody: Administration, cafeteria, upper-level administration, cafeteria workers/food service, school board, and community (Irvine)

- Teachers, everybody, the office workers, people in the office . . . bus drivers, aides working in the cafeteria . . . administration, principal, school board (Pixley)
- Classroom teachers, principals, science and PE teachers, administrators, parents, health educators, and if possible, the nurse too (Elk Grove)

Furthermore, teachers had some concrete ideas about what could be done to make nutrition education more of a priority. For example, parents could put pressure on schools to not have candy sales and to not sell junk food on campus. Food service staff could offer more nutritious choices in the cafeteria, which would lend itself to healthier eating; publishers could integrate nutrition education into core subject materials; and teachers could pass information on to students.

Teachers were mixed in their *notions regarding where nutrition education should occur*. Pixley teachers felt that the only place nutrition education happened was in the classroom; however, in Elk Grove, one participant differentiated between nutrition education and nutrition correction. She said that what schools did was largely nutrition correction. Only two out of seven teachers in Elk Grove perceived that nutrition education happened in the classroom. All the Vacaville teachers felt nutrition education should happen at home, and they agreed that currently the classroom and some homes are the main places it is actually occurring. In Irvine, the general feeling was that nutrition education happened in the classroom by default. In other words, teachers felt that parents should be teaching their children about healthy eating, but they did not.

Examples of nutrition education as actualized in classrooms included:

Specialized Curricula

- I have worked with the Dairy Council. They have a nice package. It's all together and it's free. It's teacher-friendly for the 5th grade and 2nd grade. (Irvine)
- We're developing one (curriculum) for kindergarten, but not everyone knows it's available. (Irvine)

Nutrition Awareness Campaigns

- Everybody takes the time on earth day to save our earth, so they should make a nutrition awareness week . . . there should be a big schoolwide push. (Irvine)

Informal Nutrition Education

- I find myself sometimes doing one-on-one with no real formal teaching. For example, on back-to-school night, you talk to parents about making healthy food choices. In the meantime one child is eating carrot sticks and his neighbors are eating M&M's. It's kind of hard. (Irvine)

Nutrition Education Integrated with Other Topics

- Nutrition education is already in the Health and Life Sciences curricula in our district. (Vacaville)
- We have the little guys planting their own vegetables . . . and taking care of them and that also helps them. (Pixley)

- In fourth grade we do a focus in agriculture and we focus on the nutrition aspect of it. They have to do a report with all the facets of it. Then they do a cookbook. They do an oral presentation with a recipe and we do food testing. (Pixley)

When asked specifically about *what teachers needed*, a wealth of ideas were offered:

Integration Across Staff, Grades, and Subject Matter

- We need to get more of our colleagues convinced. More of us need to join in. We need to convince those that aren't doing it and then the whole school will be on SHAPE. Then we could possibly make a dent in this. This would provide the support we need. (Elk Grove)
- The problem is that there is no consistency across grade level. That is what is happening now. (Elk Grove)
- To get consistency, we need an interdisciplinary approach. They see a part of the puzzle but not the whole puzzle. An interdisciplinary approach would provide the whole picture and lead to consistency. (Elk Grove)
- Nutrition education has to fit into the district's scope and sequence. The state needs to have standards, a scope and sequence for each grade level. Frameworks are not helpful at the school level; they're used only at the district level. (Vacaville)
- Have a committee from districts create integrated lessons; don't use commercially available lessons. This could be paid summer time or release time. (Vacaville)

Curricula and Materials

- You have a lot of teachers that would like to do it but they are not comfortable because they don't have the materials. Teachers want a "cookbook." This is what most people are comfortable with. Here is the book, here is the lesson, just teach it. (Elk Grove)
- The problem is that most teachers just can't pick up another responsibility—no available time. They want things to already be done for them. (Elk Grove)
- Materials, motivation (Pixley)
- Hands on materials, videos and posters (for example, the food pyramid) (Pixley)
- Lessons need to be there *and don't make us create anything*. (Pixley)
- Easy lessons that are teacher-friendly and show how to integrate nutrition education into other subjects. Like in social studies, how does the food get from the farm to market. (Pixley)
- Lessons with specific and consistent directions, short and specific (Pixley)
- I would say that 80% of us would not use a nutrition education curriculum if it were a stand-alone like a box with its lessons. (Pixley)
- It absolutely has to fit in our framework. (Pixley)
- A lesson plan you can deal with (Irvine)
- Something you can just slip in, rather than a whole unit (Irvine)
- Do any of you have good videos or computer programs or programs that you can plug in with nutritional value? We need all kinds of ways to be able to get to these kids. (Irvine)
- Getting back to integration . . . lessons they can use (Irvine)
- Periodicals, Weekly Reader (Vacaville)

Scientific Information

- More data on how nutrition impacts learning (Pixley)
- More information on the six food groups (Some people said there were five food groups, others said seven.) (Pixley)
- Information about how many grams of fat (Irvine)
- I think most teachers . . . aren't comfortable with it. They don't have the intricacies of it because they don't have that background. (Irvine)

Equipment

- Students are asking for the salad bar from Team Nutrition. (Vacaville)
- Sinks and access to the kitchen (Vacaville)

Most of the teachers were elementary school teachers and most felt that ***integrating nutrition education into the core curriculum*** was very important. The middle school teachers were not convinced. One individual felt that if a class were not especially devoted to nutrition education, nutrition education would not occur. (See the section above on “what teachers need” for suggestions related to integration.)

Training needs were also discussed. With respect to training, teachers stated that they wanted the training to be conducted by “experts” and that it should consist of:

Content

- Training on the actual content...or how to integrate into your classes (Irvine)
- Informational videos that are well done (Elk Grove)
- Kids have a hard time with serving size. Videos on this could be important. (Elk Grove)
- I don't know about everyone else, but I am very visual . . . videos work for me. (Pixley)

Integration

- Help on how to fit it (nutrition education) into our day (Irvine)
- Training, time (Pixley)

Hands-on Experience

- I believe that if we are given materials and shown how to use them, teachers will make time to teach it. Even if it is just a short training. I would say that training would work. (Elk Grove)
- Hands-on and personal experience (Elk Grove)
- Materials – tangible things – touchables (Elk Grove)
- We have talked about the lessons being visual and hands-on, like a cooking lesson. (Pixley)

As teachers in Pixley stated, “It’s like that Math 2000 box, that just sits in the corner.” “I like the 2000 kit, but I went for two days for training. I love it. But if I didn’t have those two days of training, I wouldn’t even use it.”

Finally, the teachers talked about the ***linkage between child nutrition and the classroom***. Most of them perceived a good relationship between teachers and food service people (when they saw them, which was not frequently) and they realized that the child nutrition workers, while they

might be the ideal nutrition educators due to the fact that they provided an interface between the food and the students, do not have the time or the training to do so. They stated that menus are the purview of the state and that, in many schools, food comes precooked, so the child nutrition people may have constraints when it comes to nutrition education.

In Vacaville there was tension reported by teachers in their relationship with food service staff, which related to territory (teachers can't use the ovens or go into the kitchen); lack of interaction and understanding of the other's responsibilities and constraints; and a general sense that cafeteria staff were treated as second-class citizens.

All mentioned the SHAPE grant as having improved the relationship between the cafeteria and the classroom. Pixley teachers talked about the close relationship they shared with the district director for child nutrition and the fact that she sometimes came into the classrooms to talk about nutrition as well as the support she gave them for nutrition education in the classroom. However, they recognized the fact that she was housed in the school and that she only had one school to worry about facilitated her efforts with respect to nutrition education.

In summary, for the most part, teachers were more enthusiastic about nutrition education than were the administrators; however, it must be noted that the teachers probably represented a nutrition education-oriented group. They would not have volunteered to come to the focus groups if they were not interested in the topic. Teachers felt that nutrition education fell on their shoulders whether it should or not because parents themselves needed to be educated. The link between nutrition and learning is still perceived as largely behavioral, and teachers felt that the educators and community alike needed more information about that link and about nutrition in general.

Similarly to the administrators, teachers felt that nutrition education was not a priority in their districts because teachers had too many other priorities, namely academics. They did, however, offer some concrete suggestions about how nutrition education could be more of a priority, such as community involvement, changes in school menus, the placement of nutrition education curricula into core subject curricula, and providing teachers with more information such as lessons and videos.

The following section presents the findings from five focus groups held with other individuals for whom nutrition education might be important: parents, child nutrition workers, school nurses, and other community members.

Mixed Groups

Mixed groups were held at Compton, Lagunitas, El Dorado, Burton, and New Haven school districts. Again, these groups differed widely. New Haven served as a pilot group and consisted of a parent/school board member, both SHAPE partners, cafeteria managers, and the district nurse; the group was multicultural (Asian, Latino, and white). The Compton group consisted of 11 African-American parents and cafeteria workers and one Latina parent. Compton's may be undeserved, but the school district population is made up of poor African Americans and increasing numbers of Latino immigrants.

Lagunitas, located in Marin County, falls at the opposite end of the spectrum, serving mostly upper middle-class white families. In fact, the Lagunitas group may be considered atypical. All members of this group (including three teachers and one principal) were on the School Site Council, were very committed to the SHAPE project, and were knowledgeable about nutrition education. El Dorado Union High School District and Burton Elementary School District are both rural districts in the central and north-central part of the state. The Burton group consisted only of child nutrition personnel and one administrator. The El Dorado focus group was composed largely of child nutrition administrators.

While not all participants used the same words to define *nutrition education*, someone in every group mentioned “educating people about nutrition.” Other comments included: making sure portions are correct and how to properly feed a family on a certain budget (Compton). All were also aware of the *relationship between nutrition and learning*, thanks to the media or their professional training. The El Dorado participants stated that they would like to see more results about eating breakfast and increased academic performance. Burton participants felt that, many times, teachers were not aware that a child had come to school with no breakfast.

Not surprisingly, the participants felt that *nutrition education was not a priority* in their district, while many felt that it should be. The rationale for it not being a priority included too many other things to do; something else in the curriculum would have to go; parents get offended when we imply that they are not feeding their kids right; nutrition education is supplementary at best; no support from the Legislature. To make *nutrition education a priority*, the following suggestions were made:

- Parents need to become more involved . . . with issues related to food because they are the first teachers. If we can “pull in” parents and set the foundation with them, I think it would be better for the school. (Compton)
- Convince the school board of the link between nutrition and learning through staff development and workshops for the California School Boards Association. (New Haven)
- I think it has something to do with how important people see it in their own lives. I usually find that those educators that are the most interested in it, and that take the little we have and expand it in their classrooms, are those that experience this interest in their personal lives. The personal interest drives and motivates them. (Lagunitas)
- I guess this could help to make nutrition education more of a priority in schools if teachers and administrators understood that children would get into trouble less. Research shows that there is a link between nutrition and discipline. (Burton)
- The key is to integrate the information in a logical sequence and in a way that is non-threatening to parents. It is more easily accepted by students. Look at nutrition from the service perception or from the health perspective. (El Dorado)
- If money were allocated for it [at the state level], it would be a priority. (New Haven)

Differences in participants’ notions regarding *nutrition education stakeholders* were also noted and may be attributed to the difference in group composition. When asked who were the *nutrition education stakeholders*, answers ranged from: everybody (teachers, students, nutrition experts, food service workers, administrators, and business/finance staff) in Compton and New Haven; to those staff responsible for delivering nutrition and health services such as child

nutrition staff, nursing staff, health educators, counselors, and student study teams in El Dorado Union; to “kitchen and cafeteria personnel and the superintendent” in Burton; to “the kids” in Lagunitas. Most participants felt that *nutrition education should take place* in the home, but indeed, it took place in the classroom.

Comments from the mixed group participants about what teachers needed to teach their students about nutrition included the following:

Nutrition Education Integrated into Other Subject Areas

- Cooking classes [that] are nutritional [sic] minded. (Compton)
- It should be mixed up into the health stuff. (Compton)

Motivation

- I don’t think that money is all the issue. (Compton)
- Teachers should be involved. People “buy in” better when they are involved in decision making. I think there should be a committee. (Compton)

Training

- Teachers need training on how to integrate. (Compton)
- Skills. Some people are slow to apply their knowledge. (El Dorado)
- In-service training is necessary. (Burton)
- In the last in-service that we had, we teamed a teacher with a child nutrition person and we worked together, so teachers became aware that we are a resource (cafeteria person speaking). (Burton)
- Workshops during teacher workdays (Lagunitas)
- In-service training (Lagunitas)
- Give them personal experience with the food served in the schools. (Lagunitas)

Scientific Information

- Information and materials (Compton)
- Good information and good resources (El Dorado)
- Provide research. It is too much work for them to research about nutrition themselves. (El Dorado)
- Show them specifically how food affects your brain. (Lagunitas)
- Show what happens with vitamin deficiency and lack of caloric intake. (New Haven)

Curriculum and Materials

- They need a curriculum that is already there. (El Dorado)
- Time for planning it along with the other assignments (El Dorado)
- Materials and innovative ways of presenting materials (El Dorado)
- Hands-on materials. Kids really seem to enjoy it. (El Dorado)
- Recipes that kids could practice and get credit for (El Dorado)
- They won’t make their own nutritional resources. They don’t have any time. (Burton)
- Films, materials, a box that has everything they would need so they would not have to worry about preparing too much. (Burton)

Questions about the *integration* of nutrition education into the core curriculum resulted in relatively few remarks on the part of the mixed groups, except in New Haven. Only one person in Compton talked about integrating nutrition, “...you can integrate nutrition into math, social studies, history, go across the curriculum.” The El Dorado Union participants mentioned using nutrition as a theme for English or teaching nutrition in Science. More important for the El Dorado Union folks was the consistent message about the importance of healthy eating across the disciplines and the grades: “The whole school has to be involved.” In Burton, participants mentioned the importance of teaching nutrition education outside the cafeteria but felt that the teachers lacked ideas and materials.

In New Haven, where the group included both SHAPE partners and a parent who was also a school board member, suggestions regarding integration included:

- The curriculum has to be thematic, K-12. If it’s really integrated, it’s a continuing message that makes nutrition important to overall well-being; this is motivating for students. The major outcome would be healthier and academically successful students.
- Everyone on campus has to agree that this [integration] is important.
- Integration has to come from the state level; nutrition has to be integrated into statewide curricula.

With respect to the *relationship between the cafeteria and the classroom*, the Burton child nutrition staff had much to say:

- We are only support staff in this school but really, everybody in the school setting is an educator. We have to think highly enough of ourselves and our roles in the lives of students and value what we are doing.
- Sometimes teachers send kids to us in the morning when they know that they haven’t had breakfast. Cafeteria personnel are nurturers.
- We really attract needy kids who need attention in the morning. You can tell that they need a hug and that makes us feel good.

They had also had positive experiences with the classroom staff. “In the last in-service we had, we teamed a teacher with a child nutrition person and we worked together, so teachers became aware that we are a resource. We have to make teachers aware that we are an asset and that they will be welcome into our kitchen. Our experience has shown a real good response from teachers. We put together a whole meal. Each group of 2-3 teachers was responsible for a portion of the meal and served it buffet style. We did it in the classroom and teachers really liked our meals.” This strong relationship may have been due to the SHAPE grant.

The Lagunitas participants stated that they had a good relationship but that they were limited in their activities by the “physical structure of the school.” In Compton the participants who were child nutrition staff stated that they had a good relationship with the classroom but that, due to safety issues, children were not allowed in the kitchens. Participants mentioned a Nutrition Committee with parent members representing the different cultural groups in the city. Both Burton and Compton participants discussed the importance of parent participation in a sound

nutrition education program, although it was the opinion in Compton that parents do not feel comfortable participating because they themselves may have had negative experiences in schools.

The New Haven group had many suggestions for specific coordinated activities, including menu planning by students, students eating what they're studying and eating what they're growing (for garden projects), and doing ethnic food tasting.

The relationship between the child nutrition workers and the teaching staff appeared less positive in El Dorado Union. While there were no specific complaints, a number of barriers were mentioned. These include:

- Scheduling both available time and the personnel to work together
- Communication and actually having the opportunity to communicate
- If we had to go to meetings after school, people would start complaining. You know, "Oh, one more thing for me to do!"
- The cafeteria just has not traditionally been the concern of the school as a whole.
- Teachers need to be educated on the importance of nutrition education.
- Logistic. Schools are not built to facilitate interaction between the different departments.
- We have done food carts, for example, in order to provide healthy foods for the kids when they are out of class, but the principal just got tired of it because it caused such a mess.

In summary, it must be pointed out that each mixed group was extremely different in composition and that the results are therefore difficult to compare. The Lagunitas group had a pro-SHAPE agenda, the Burton group was overrepresented by child nutrition workers, the Compton group was almost exclusively parents, and New Haven included both SHAPE partners and a very vocal school board member. El Dorado Union appeared to be largely child nutrition administrators and health educators, with one former parent.

Thus, each of these groups had its own particular slant. Nonetheless, all knew about nutrition education. They said they understood the link between good nutrition and learning; that nutrition education was not a priority in their respective districts; and that teachers needed training, information, and materials to be able to better implement a nutrition education program.

The relationship between the cafeteria and the classroom appeared to be strong in Burton and New Haven, weak in Compton and Lagunitas, and somewhat negative in El Dorado Union. This conclusion is based on the available data (which are somewhat sketchy for Lagunitas). El Dorado Union participants did note that it was easier to work with elementary students in the implementation of an integrated nutrition education approach as the high school was too compartmentalized.

Conclusions

While there seems to be a lot of goodwill and enthusiasm about the SHAPE California project in school districts around the state, nutrition education is not considered an educational priority. Despite a range of "nutrition philosophies," most participants (no matter what their location or

profession) agreed that nutrition education could not compete with the more pressing academic concerns of school districts in California. There seemed to be a lot of concern regarding the lack of current scientific information regarding nutrition. Someone in every group mentioned that often the information one received was misleading and contradictory. For example, different participants stated that there were five, six, seven, and eleven food groups. While everyone gave “lip service” to recognizing the link between nutrition and learning, participants seemed uncertain about the correlation. More credence seemed to be given to the “sugar-hyperactivity myth.” All educators were convinced that there was a direct link between the foods eaten by children and the way they behaved.

All had suggestions about how to make nutrition education happen in California. Pulling from the 12 groups, the following recommendations seem most salient:

- Provide all teachers with up-to-date, accurate information, easy-to-use hands-on materials, and interesting training.
- Help teachers to integrate nutrition education into their core curricula, as they feel it is worth the effort.
- Expect that nutrition education is a part of everyone’s day, from the kindergarten child to the superintendent.
- The State must place more emphasis on nutrition education for the message to reach the districts.
- The community needs to be educated about the link between good nutrition and learning. Schools can “help the cause” by documenting the connection.
- Interventions such as that in Hawthorne (feeding children to improve test scores) should be conducted and publicized.
- Parent groups also need up-to-date, accurate information and training. Trained parents can “encourage” schools to remove junk foods from school campuses as well as influence administrators to implement nutrition education.
- It would be useful to create more of a team spirit between the cafeteria workers and the teachers. Funding is needed for child nutrition workers to be trained and to spend more time on campus and in the classrooms.
- Child Nutrition administrators should be provided with the opportunity to learn how they can increase their profits by selling healthy foods; however, the message about how good healthy foods can taste has to come from parents and teachers as well.

Recommendations

Ten recommendations for school districts and for the California Department of Education are drawn from the needs assessment findings.

- Strong support exists from educators for emphasizing the link between nutrition and academic performance. The California Department of Education should take the lead in communicating this link to the Legislature, educators, school board members, parents, and community residents through multiple communication channels.
- Nutrition education programs must preserve the following key elements: sufficient exposure; a focus on building skills; scope and sequence of curriculum; developmental appropriateness; and adequate teacher preparation.
- Integration of nutrition education into the core curriculum should be field-tested and should not sacrifice the key elements of successful nutrition education programs.
- Nutrition education must take place in both the classroom and the cafeteria, and planning and implementation of activities and lessons should occur in partnership.
- Resources and administrative support must be devoted to building effective partnerships between the classroom and the cafeteria, including time for meetings and other modes of communication; official time for cafeteria staff to be at the school site; and staff development for classroom and child nutrition representatives to promote understanding on each side about the roles and responsibilities of the other.
- The school environment needs to reflect and support nutrition education objectives.
- In order for nutrition education to be implemented in the classroom, the California Department of Education should provide materials (cooking supplies, lesson plans that integrate nutrition into core subjects, stand-alone nutrition lessons, multimedia products, commercial nutrition activities); and training in general nutrition and how to integrate nutrition into core subjects.
- To implement nutrition education in the cafeteria, the California Department of Education should provide grants (for staff, training, and materials); training (in “selling” nutrition to instructional staff); and materials.
- Nutrition knowledge should be added to student assessments in order to make nutrition education a higher priority.
- Parents should be given training and information about nutrition in order to support and reinforce school-based nutrition education.